



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of:
Masahiro HASEBE et al.

Application No.: 10/705,833

Group Art Unit: 3616

Filed: November 13, 2003

Examiner: T.C. To

For: AIRBAG AND AIRBAG DEVICE

APPEAL BRIEF UNDER 37 CFR § 41.37

Date: April 13, 2006

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is filed pursuant to 37 CFR § 41.37. A credit card authorization form in the amount of \$500.00 is attached for the Brief fee.

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REAL PARTY IN INTEREST

The real party in interest is Assignee Takata Corporation.

RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' representative, and the Assignee of this application are aware of no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

STATUS OF CLAIMS

This is an appeal from the final rejection of claims 8-11 as presented in the Office Action of October 20, 2005, and as maintained in the Advisory Action of February 1, 2006.

Claims 9-11¹ are pending in the application. Each of claims 9-11 stands rejected, and the rejection of each of claims 9-11 is appealed.

Claims 9-11 on appeal are set forth in their entirety in the Claims Appendix attached hereto.

STATUS OF AMENDMENTS

Each of the claim amendments presented in Appellants' Amendment filed January 17, 2006, in response to the Office Action of October 20, 2005, has been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to an airbag and an airbag device installed in, for example, a vehicle. More specifically, the present invention relates to an airbag and an airbag device having a sensor for detecting an internal pressure of the airbag (specification page 1, lines 5-9).

¹ Claim 8 was canceled by Appellants' Amendment filed January 17, 2006.

The invention overcomes problems associated with conventional airbag devices. For example, in one conventional device, the pressure sensor is installed at a filter for filtering gas from a gas generator. When the airbag is inflated, the gas from the gas generator passes the filter at a high speed toward the inside of the airbag. When the pressure sensor is installed at the filter, it is difficult to accurately detect the pressure due to Karman's vortex and venturi action caused by the gas flow (specification page 1, lines 14-23).

Accordingly, it is an object of the present invention to provide an airbag having a pressure sensor for detecting the internal pressure of the airbag with high precision, and an airbag device comprising the airbag (specification page 1, lines 24-27).

The invention as defined in independent claim 11 is directed to an airbag device (specification page 4, line 4; reference number 10 in Fig. 1). The airbag device comprises an airbag including a bag portion (specification page 4, line 7; reference number 12 in Fig. 1) to be inflated in front of the driver. The bag portion has a driver-facing surface (specification page 4, line 19; reference number 12c in Fig. 1 and Fig. 3(b)) and a rear portion (specification page 4, line 22; see right-hand portion of Fig. 3(b)) located at a side opposite to the driver-facing surface in an inflated state.

The airbag also has a pressure sensor (specification page 4, lines 9-11, and page 5, lines 1-19; reference number 18 in Fig. 1 and Fig. 3(b)) mounted on an inner surface (specification page 5, lines 1-3; see Fig. 1, Fig. 2, and Fig. 3(b)) of the rear portion where the driver does not face. The pressure sensor is capable of detecting an inner pressure of the bag portion when the airbag is inflated (specification page 4, lines 9-11). The

pressure sensor is located on the rear portion outside the steering wheel (specification page 10, lines 12-21; Fig. 6).

The device has a gas generator (specification page 4, lines 8-9 and 22-29; reference number 16 in Fig. 1 and Fig. 3(b)) attached to the airbag for inflating the airbag.

With the claimed invention, it is possible to place the pressure sensor at a portion of the airbag other than where the airbag contacts the occupant or the vehicle body. By virtue of this arrangement, when the airbag contacts the occupant or the vehicle body, it is possible to eliminate shock, vibration, and pressure applied to the pressure sensor, thereby preventing damage to the pressure sensor and any variation in detecting the pressure (specification page 2, line 24, through page 3, line 3).

Furthermore, because of the sensor location, high-speed air flow from the gas generator does not affect the sensor, and it is possible to detect the pressure with high precision (specification page 2, lines 9-11).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

35 U.S.C. § 103(a) - Takada in view of Zumpano

Claims 8-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,805,930 to Takada in view of U.S. Patent No. 6,513,829 to Zumpano. The Office Action acknowledges that "Takada does not disclose a plurality of pressure sensors mounted on an inner surface of the rear portion where the driver does not face, the pressure sensors detecting an inner pressure of the bag portion when the airbag is inflated . . . wherein a plurality of pressure sensors is disposed on the inner surface of one bag portion and being located on the rear portion outside the steering wheel" (Office Action page 3, numbered paragraph 6).

The Office Action asserts that "Zumpano teaches the invention wherein a plurality of pressure sensors (49) mounted on an inner surface of the rear portion of the airbag, the pressure sensors (49) detecting an inner pressure of the bag portion when the airbag is inflated . . ." (Office Action page 3, numbered paragraph 6).

The Office Action concludes that "it would have been obvious . . . to modify the driver protecting system of Takada by providing the pressure sensors and harness as taught by Zumpano along the inner rear surface of the airbag in order to adjust the pressure of the airbag upon inflation such that accommodate the force of impact of the occupant with the airbag in a manner which causes both a resistance to and at least a partial absorption of the force of impact" (Office Action pages 3-4, numbered paragraph 6).

The Advisory Action indicates that "Applicant's argument with respect to the proposed amended claim 11 has not found persuasive, the proposed amendment has not overcome the 35 U.S.C. 103 in the final office action."

ARGUMENT

35 U.S.C. § 103(a) - Takada in view of Zumpano

The rejection of claims 9-11 under § 103(a) is in error because the combined disclosures of Takada and Zumpano would not have rendered obvious the airbag device defined by any of claims 9-11.

Claims 9-11

As indicated above, the Office Action asserts that "it would have been obvious . . . to modify the driver protecting system of Takada by providing the pressure sensors and harness as taught by Zumpano."

The above-quoted portion of the grounds of rejection is in error. Specifically, the rejection is in error because there is no suggestion or motivation in either Takada or Zumpano that would have led one to select the references and combine them in a way that would produce the invention defined by any of claims 9-11.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Furthermore, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

Appellants' claimed invention includes in pertinent part "a pressure sensor mounted on an inner surface of the rear portion where the driver does not face, said pressure sensor detecting an inner pressure of the bag portion when the airbag is inflated, said pressure sensor being located on the rear portion outside the steering wheel."

In Takada, an air bag 11 is attached to a steering wheel 3 to protect a driver. The air bag 11 includes stitched seams 4 for regulating the gas pressure on the steering wheel side. When the pressure of the air bag 11 exceeds the predetermined pressure, the thread seams 4 break or are deviated to allow the gas to escape from the air bag to reduce the pressure therein.

Takada discloses the air bag attached to the steering wheel, but, as acknowledged by the examiner, there is no pressure sensor inside the air bag and harness associated therewith. The thread seams are simply broken at the

predetermined pressure. Appellants' claimed pressure sensor limitation is neither disclosed nor suggested by Takada.

In Zumpano, a restraint assembly includes inflatable members 22, 24 at upper front and rear sides of the occupant. The inflatable member 22 includes chambers A-F, and the inflatable member 24 includes chambers A-C. Each chamber is provided with a pressure sensor 49 located at a side opposite to the occupant 10, as shown in Zumpano's Fig. 2.

In Zumpano, the pressure sensors are mounted on the respective chambers for the inflatable members. Zumpano's pressure sensors are not mounted on the airbag for the driver.

Furthermore, according to Appellants' claimed invention, the pressure sensor of the airbag is located outside the steering wheel.

Thus, while Takada may disclose an airbag attached to the steering wheel, and Zumpano may disclose the use of pressure sensors, there is no suggestion in the asserted combination of references of Appellants' claimed device in which the pressure sensor is mounted on an inner surface of the rear portion of the air bag, and is located outside the steering wheel.

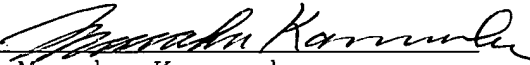
Therefore, the claimed invention would not have been obvious because there is no suggestion or motivation in either Takada or Zumpano that would have led one to select the references and combine them in a way that would produce the invention defined by any of claims 9-11. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

Appellants submit, therefore, that the grounds of rejection presented in the final Office Action fail to establish a *prima facie* case of obviousness with respect to each of claims 9-11.

Appellants respectfully submit that the rejection of claims 8-11 under § 103(a) is in error, and request that the final rejection be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

9. An airbag device according to claim 11, further comprising a harness electrically connected to the pressure sensor, said harness being disposed along the inner surface of the bag portion.

10. An airbag device according to claim 11, wherein a plurality of pressure sensors is disposed on the inner surface of one bag portion.

11. An airbag device for a driver attached to a steering wheel comprising an airbag for protecting a driver comprising:

 a bag portion to be inflated in front of the driver, and having a driver-facing surface and a rear portion located at a side opposite to the driver-facing surface in an inflated state, and

 a pressure sensor mounted on an inner surface of the rear portion where the driver does not face, said pressure sensor detecting an inner pressure of the bag portion when the airbag is inflated, said pressure sensor being located on the rear portion outside the steering wheel, and

 a gas generator attached to the airbag for inflating the same.

EVIDENCE APPENDIX

No copies of evidence are appended hereto.

RELATED PROCEEDINGS APPENDIX

No copies of decisions are appended hereto.